

TSOOT" E4TES260

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS

gcgcggcggtgtggtgcggcggggaagtcttggtccgtccgctaggagtcgtgcgtgcgaggattatggct 80
M A
GCTGTTCTCAAAATAATCTACAGGAGCAACTAGAACGTCACCTCAGCCAGAACACTTAATAATAAATTAAGTCTTTCAA 160
3 A V P Q N N L Q E Q L E R H S A R T L N N K L S L S K
ACCAAAATTTTCAGGTTTCACCTTTTAAAGAAACATCTTCAGATAACAATGTATCTGTAACTAATGTGTCAAGTAGCAA 240
30 P K F S G F T F K K K T S S D N N V S V T N V S V A
AAACACCTGTATTAAGAAATAAGATGTTAATGTTACCGAAGACTTTTCTTCAGTGAACCTCTACCCACACCAAAAT 320
56 K T P V L R N K D V N V T E D F S F S E P L P N T T N
CAGCAAAGGTCAGGACTTCTTTAAATAATGCTCCAGCAGGACAGGAACACAGAGAGGTGGATCAAAATCATTTATTGCC 400
83 Q Q R V K D F F K N A P A G Q E T Q R G G S K S L L P
AGATTCTTCAGACTCCGAAGGAAGTTGTATGCACTACCCAAACACACCAACTGTAAAGAAATCCGGGATACTGCTC 480
110 D F L Q T P K E V V C T T Q N T P T V K K S R D T A
TCAAGAAATTAGAAATTTAGTTCTTCACCAGATCTTTAAGTACCATCAATGATTCGGATGATATGGATGACTTTGATACT 560
135 L K K L E F S S S P D S L S T I N D W D D M D D F D T
TCTGAGACTTCAAAATCATTTGTACACACCACCCAAAGTCACCTTTGTAAGAGTAAGCACTGCTCAGAAAATCAA 640
163 S E T S K S F V T P P Q S H F V R V S T A Q K S K K G
TAAGAGAAACTTTTTTAAAGCACAGCTTTTATACAACAACACAGTAAGACTGATTTCCTCCACCCTCTCTGAAAGCG 720
190 K R N F F K A Q L Y T T N T V K T D L P P S S E S
AGCAAATAGATTTGACTGAGGAACAGAGGATGACTCAGAAATGGTTAAGCAGCGATGTGATTTGCATCGATGCGCCC 800
216 E Q I D L T E E Q K D D S E W L S S D V I C I D D G P
ATTGCTGAAGTCATATAAATGAAGATGCTCAGGAAAGTGACTCTCTGAAAACCTCATTTGGAAAGATGAAAGAGATAATAG 880
243 I A E V H I N E D A Q E S D S L K T H L E D E R D N S
CGAAAAGTGAAGAATTGGAGAAGCTGAATTACATTCAACTGAGAAAGTTCCATGTATTGAATTGATGATGATT 960
270 E K K K N L E E A E L H S T E K V P C I E F D D D
ATGATACGGATTTGTTCCACCTTCTCCAGAGAAATTAATTTCTGCTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT 1040
296 Y D T D F V P P S P E E I I S A S S S S K C L S T L
AAGGACCTTGACACATCTGACAGAAAGAGGATGTTCTTAGCACATCAAAAGATCTTTTGTCAAAACCTGAGAAATGAG 1120

FIG. 2A



FOOT" E4FE5260

323 K D L D T S D R K E D V L S T S K D L L S K P E K M S
TATCAGGAGCTGAATCCAGAAACAGCAGACTGTGACGCTAGACAGATAAGTTTACAGCAGCAGCTTATTCATGTGA 1200
350 M Q E L N P E T S T D C D A R Q I S L Q Q Q L I H V
TGGAGCACATCTGTAAATTAATTGATFACTATTCTCTCATGATAAACTGAAACTTTTGGATTGTGGAAACGAACTGCTTCAG 1280
376 M E H I C K L I D T I P D D K L K L L D C G N E L L Q
CAGCGGAACATAAGAAAGAACTTCTTAACGGAAGTAGATTTAATAAAAGTGATGCCAGTCTTCTTGGCTCATTTGTGGAG 1360
403 Q R N I R R K L L T E V D F N K S D A S L L G S L W R
ATACAGGCTTGAATTCAGTGGCCCTATGAGGGTGATTCCTGCCCTACAGGGAATTCATGAAGGAGTTAAATTTTT 1440
430 Y R P D S L D G P M E G D S C P T G N S M K E L N F
CACACCTTCCCTCAAATCTGTTCCTCTGGGACTGTTTACTGACTACCCACCTAGGAAAGACAGGATTCCTGCCCACC 1520
456 S H L P S N S V S P G D C L L T T T L G K T G F S A T
AGGAAGAATCTTTTGAAGGCCCTTATTCAATACCCATTACAGAACTCTTTGTAAAGTAGCAACTGGGCTGAAACACC 1600
483 R K N L F E R P L F N T H L Q K S F V S S N W A E T P
AAGACTAGGAAAAAATGAAGCTCTTATTTCAGGAAATGTTCTCACAAGCAGCTGTGTGAAAGATCAGAATAAAC 1680
510 R L G K K N E S S Y F P G N V L T S T A V K D Q N K
ATACTGCTTCAATAAATGACTTAGAAAGAGAAACCACTTCCTAATGATATTGATAATTTTGACATAGATGACTTTGAT 1760
536 H T A S I N D L E R E T Q P S Y D I D N F D I D D F D
GATGATGACTGGGAAGACATAATGCAATAATTTAGCAGCCAGCAAAATCTCCACAGCTGCCCTATCAACCCATCAAGGA 1840
563 D D D W E D I M H N L A A S K S S T A A Y Q P I R E
AGTCCGCCAATTAATCAGTAATCAGAAAGACTTTCCTCAGCCAGCAGACTGTCTTCCAGTGTCTACTCTCTCAAA 1920
590 C R P I K S V S E R L S S A K T D C L P V S S T A Q
ATATAAAGCTTCTCAGAGTCAATTCAGAAATTTATATCAGCAAGTCAAGCAAAATTTAGCATCCAGAAATCTGAAACATGAG 2000
616 N I N F S E S I Q N Y T D K S A Q N L A S R N L K H E
CGTTTCCAAAGTCTTAGTTTTCCTCATACAAAGGAATGATGAAGATTTTTCATAAAAAATTTGGCCTGCATAATTTTAG 2080
643 R F Q S L S F P H T K E M M K I F H K K F G L H N F R
AACTAATCTGCTTAGAGGGGATCAATGCTGCACTGCTTGGTGAAGACTGTTTTATCTGATGCCGACTGGAGGTGTAAGA 2160
670 T N Q L E A I N A A L L G E D C F I L M P T G G G K
GTTTGTGTACCAGCTCCCTGCTGTGTTTCTCTGGGTGCTGTTGTCATTTCTCCCTTGAGATCACTTATCTGTAGAT 2240

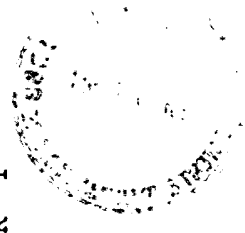
FIG. 2B



FOOT" E4FE5450

696 S L C Y Q L P A C V S P G V T V V I S P L R S L I V D
CAAGTCCAAAAGCTGACITTCCTTGGATATTCAGCTACATACTCTGACAGGTGATAAGACTGACTCAGAAAGCTACAAATAT 2320
723 Q V Q K L T S L D I P A T Y L T G D K T D S E A T N I
TTACCTCCAGTTATCAAAAAGACCCAAATCATATAAACTTCTATATGTCACTCCAGAAAAGATCTGTGCAAGTAACAGAC 2400
750 Y L Q L S K K D P I I K L L Y V T P E K I C A S N R
TCATTCTACTCTGGAGAATCTCTATGAGAGGAAGCTCTTGGCAGCTTTTGTATGTATGATGAAGCAATGTGTGAGTCAG 2480
776 L I S T L E N L Y E R K L L A R F V I D E A H C V S Q
TGGGACATGATTTTCGTCAGATTACAAAAGAAATGAATATGCTTCGCCAGAAAGTTTCCTTCTGTTCGGTGATGGCTCT 2560
803 W G H D F R Q D Y K R M N M L R Q K F P S V P V M A L
TAGGCCACAGCTAATCCAGGTACAGAAAGCACTCTGACTCAGCTGAAGATTCTCAGACCTCAGGTGTTTAGCATGA 2640
830 T A T A N P R V Q K D I L T Q L K I L R P Q V F S M
GCTTTAACAGACATAATCTGAAATACTATGTTATACGAAAAGCTTAAAGGTGGCATTGTGCTCCTAGATGGATC 2720
856 S F N R H N L K Y Y V L P K K P K K V A F D C L E W I
AGAAAGCACCAACCATATGATCAGGGATAATTTACTGCTCTCCAGGCGAGAATGTGACACCATGGCTGACACGTTACA 2800
883 R K H H P Y D S G I I Y C L S R R E C D T M A D T L Q
GAGAGATGGGCTCGCTCTTGTACCATGCTGGCCTCAGTGATTCTGCCAGAGATGAAGTGCAGCAGAAGTGGATTA 2880
910 R D G L A A L A Y H A G L S D S A R D E V Q Q K W I
ATCAGGATGGCTGTCAGGTTATCTGTGCTACAATTCGATTGGGAATGGGAATTCACAAACCGGACGTGCGATTGTGATT 2960
936 N Q D G C Q V I C A T I A F G M G I D K P D V R F V I
CATGCATCTCTCCCTAAATCTGTGAGGGTTACTACCAAGAATCTGGCAGAGCTGGAAGAGATGGGGAATATCTCACTG 3040
963 H A S L P K S V E G Y Y Q E S G R A G R D G E I S H C
CCTGCTTTTCTATACCTATCATGATGTGACCAGACTGAAAAGACTTATAATGATGGAAAAGATGGAAACCATCATACAA 3120
990 L L F Y T Y H D V T R L K R L I M M E K D G N H H T
GAGAAACTCACTTCAATAATTTGTATAGCATGGTACATTACTGTGAAAATATAACGGAATGCAGGAGAATACAGCTTTTG 3200
1016 R E T H F N N L Y S M V H Y C E N I T E C R R I Q L L
GCCTACTTTGGTGAATAATGATTTAATCTGATTTTGTAAAGAAAACACCCAGATGTTCTTGTGATATAATGCTGTAAAC 3280
1043 A Y F G E N G F N P D F C K K H P D V S C D N C C K T

FIG. 2C



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
OF FTSMAN		

AAAGGATTATAAAACAAGAGATGTGACTGACGATGTGAAAAAGTATTGTAAAGATTGTTCAGAACATAGTTCATCAAG 3360
 1070 K D Y K T R D V T D D V K S I V R F V Q E H S S S Q
 GAATGAGAAATATAAAACATGTAGTCTCTGGAAGATTACTATGAATATGCTGCTCGACATTTCTTGGGAGTAAG 3440
 1096 G M R N I K H V G P S G R F T M N M L V D I F L G S K
 AGTCAAAAAATCCAGTCAGGTATATTGGAAAAAGGATCTGCTTATTACGACACAAATGCCGAAAGACTTTTAAAAAGCT 3520
 1123 S A K I Q S G I F G K G S A Y S R H N A E R L F K K L
 GATACTTGACAAGATTTTGGATGAAGACTTATATATCAATGCCAATGACCGGATCGCTTATGTATGCTCGGAATA 3600
 1150 I L D K I L D E D L Y I N A N D Q A I A Y V M L G N
 AAGCCCAAACTGTACTAAATGGCAATTTAAAGGTAGACTTTATGGAACACAGAAAATTCAGCAGTGTGAAAAACAAAA 3680
 1176 K A Q T V L N G N L K V D F M E T E N S S S V K K Q K
 GCGTTAGTAGCAAAAGTGTCTCAGAGGGAAGAGATGGTTAAAAATGTCTTGGAGAACTTACAGAAGTCTGCAATCTCT 3760
 1203 A L V A K V S Q R E E M V K K C L G E L T E V C K S L
 GGGGAAAGTTTTTGGTGTCCATTACTTCAATATTTTAAATACCGTCACTCTCAAGAAGCTTGCAGAATCTTTATCTTCTG 3840
 1230 G K V F G V H Y F N I F N T V T L K K L A E S L S S
 ATCTGAGGTTTTGCTTCAAAATGTGATGGTGTACTGAAGACAAACTGGAATAATATGTCGCGAAGTGAATTCAGTATTA 3920
 1256 D P E V L L Q I D G V T E D K L E K Y G A E V I S V L
 CAGAAATACTCTGAATGGACATCGCCAGCTGAAGACAGTTCCCCAGGATAAGCCTGTCCAGCAGCAGAGCCCCCGAAG 4000
 1283 Q K Y S E W T S P A E D S S P G I S L S S S R G P G R
 AAGTCCCGCTGAGGAGCTTGACGAGGAAATACCCGTATCTTCCCACTACTTTGCAAGTAAACCAGAAATGAAAGGAAGA 4080
 1310 S A A E E L D E E I P V S S H Y F A S K T R N E R K
 GGAAAAAGATGCCAGCTCCCAAAGGTCTAAGAGGAGAAAAACTGCTTCCAGTGGTTCCAAAGGCAAGGGGGTCTGCC 4160
 1336 R K K M P A S Q R S K R R K T A S S G S K A K G G S A
 ACATGTAGAAAGATATCTTCCAAAACGAAATCCTCCAGCATCATTTGGATCCAGTTCAGCCTCACATATCTTCAAGCGAC 4240
 1363 T C R K I S S K T K S S I I G S S A S H T S Q A T
 ATCAGGAGCCCAATAGCAATTTGGGATTATGGCTCCACCGAAGCCTATAAATAGACCGTTTCTTAAGCCTTCATATGCAT 4320
 1390 S G A N S K L G I M A P P K P I N R P F L K P S Y A
 TCTCATAAcaaccgaatctcaatgtacatagaccctcttcttgtgtcagcatctgacccatctgtgactataaagctg 4400
 1416 F S
 ttattcttgttataccaaaaaaaaaaaaaaaaaaaa 4437

FIG. 2D

APPROVED	O.G. FIG.
BY	CLASS
	SECRET

649 FPHTKEMMKIFHKKFGLHNFRNQLNLEA INAALLGEDCFILMPTGGGKSLCYQLPACV-----SPGVTVVISPLRSLIVDQV BLM
 74 FPWSGKVKDILQNVFKLEKFRPLQLETINVTMAGKEVFLVMPGTGGGKSLCYQLPALC-----SDGFTLVICPLISLMEDQL REQ
 659 YPWSDEVLYRLHEVFKLPGFRPNQLEAVNATLQGDVFLVMPGTGGGKSLCYQLPAVVKSGKTHGTIVISPLISLMQDQV SGS1
 16 -----VLQETFCYQQFRPCQEEI IDTVLSGRDCLVMPGTGGGKSLCYQIPALL-----LNGLTVVVSPPLISLMKDQV recQ

Ia

725 QKLTSLDIPATYLTGDKTDSEATNIYLQLSKKDPIIKLLYVTPEKICASNRLISTLENLYERKLLARFVIDEACHVCSQWG BLM
 150 MVLKQLGISATMLNASSSKEHVWVHDEMNVNKNSELKLIYVTPEKIAKSMFMSRLEKAYEARFTRIADVDEHVHCCSQWQ REQ
 739 EHLLNKNIKASMFSSRGTAEQRRQTFNLFIN--GLLDLVYISPESISASEQCKRAISRLYADGKLARIIVDEAHCHVCSNWG SGS1
 83 DQLQANGVAAACLNSTQTREQQLEVMT--GCRTGQIRLLYIAPERL---MLDNFLEHL-AHWNPVLLAVDEAHCHISQWG recQ

II

805 HDFRQDYKRMNMLRQKFPSPVPMALTATANPRVQKDILTLQKILRPQVFSMFRNHNLYVYVLPKKPKKVA---FDCLEW BLM
 230 HDFRPDYKALGILKRQFPNASLIGLTATATNHLVLTDAQKILCIEKCFRTASFNRPNL--YVEVRQKPSNTDFIEDIVKL REQ
 817 HDFRPDYKELKFFKREYDPDIPMIALTATASEQVRMDIIHNLKEPFLKQSFNRTNL--YVEVNKKTKNT---IFEICDA SGS1
 157 HDFRPEYAALGQLRQRFPTLPFMALTATADTTTRQDQIVRLGLNDPLIQISSDRPNIRY--MLMEKFKPLDQLM----RY recQ

III *

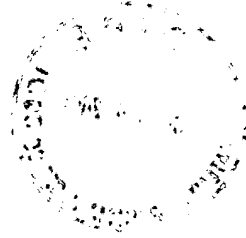
882 IRKHHPYDSGIIYCLSRRECDTMADTLQRDGLAALAYHAGLSDSARDEVQKWINQDGCQVICATIAFGMGIDKPDVRFV BLM
 309 INGRYKQSGIIYCFSQKDSEQVTVSLQNLGIHAGAYHANLEPEDKTTVHRKWSANE-IQVVVATVAFMGIDKPDVRFV REQ
 893 VKSRFNQGTGIIYCHSKKSCEQTS AQMQRNGIKCAYYHAGMEPDERLSVQKAWQADE-IQVICATVAFMGIDKPDVRFV SGS1
 233 VQEQ-RGKSGIIYCNRSRAKVEDTAAALQSKGISAAAYHAGLENNVRADVQEKFORDD-LQIVVATVAFMGINKPNVRFV recQ

V

962 IHASLPKSVGEYQESGRAGRDGEISHCLLFYTYHDVTRLKRLIMMEKDGNNHHTRETHFNNNLYSMVHYCENITECRRIOQL BLM
 388 IHHSMSKSMENYQESGRAGRDDMKADCILYGFGDIFRISMMVVMENVGQQ-----KLYEMVSYCQNISKSRRVLM REQ
 972 YHFTVPRLEGYYQETGRAGRDGNYSYCITYFSFRDIRTMQTMIQDKNLDRENKEKHLNKLQQVMA YCDNVTDCCRKLVS SGS1
 311 VHFDIPRNIESYYQETGRAGRDGLPAEAMLFYDPPADMAWLRRCLEEKPPQQLQDIERH--KLNAMGAFAEAQT-CRRLVL recQ

VI

FIG. 4



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
TECHNICAL		



HG2162
HG2635
HeLa

HG1943
HG2162
HG2703
HG1584
HG1987
HG1972
HG2231
HG1626
HG2820

FO500T" E4TE9460

4.5 kb →



FIG. 5A

FIG. 5B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CHAFTSMAN		

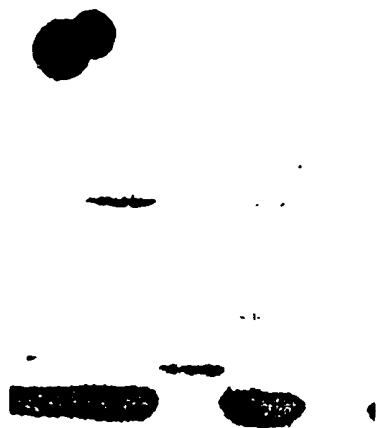


FIG. 6A



FIG. 6B



FIG. 6C

FO500T CHTES/60



APPROVED	O.G. F.G.	
BY	CLASS	SUBCLASS
CHAFTSMAN		



FIG. 6D

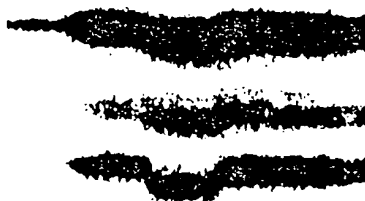


FIG. 6E

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